ATTACHMENT C

INSPECTION PLAN

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LIST OF ABBREVIATIONS/ACRONYMS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
CAM	continuous air monitor
CFR	Code of Federal Regulations
CSU	container storage unit(s)
FMU-7	Facility and Waste Operations Division
IRF	Inspection Record Form
LANL	Los Alamos National Laboratory
m^3	cubic meters
ppmw	parts per million by weight
rem	Roentgen equivalent man
TA	technical area

ATTACHMENT C
INSPECTION PLAN

In accordance with the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC) §270.14(b)(5) and 20.4.1 NMAC §264.15, revised June 14, 2000 [6-14-00], inspection requirements for all hazardous and/or mixed waste management units at Los Alamos National Laboratory (LANL) are addressed in Appendix C of the most recent version of the "Los Alamos National Laboratory General Part B Permit Application," hereinafter referred to as the LANL General Part B. This attachment presents additional inspection requirements applicable to the waste management units at Technical Area (TA) 55. These requirements have been developed to identify equipment malfunctions and deterioration, operator errors, and discharges that might cause or lead to a release of hazardous or mixed waste to the environment or a threat to human health. Inspections will be conducted often enough to identify problems in time to correct them before they harm human health or the environment.

C.1 TA-55 VAULT [20.4.1 NMAC §264.15(b) and 264.174]

The Vault is a container storage unit (CSU) located in the basement at TA-55-4. The CSU consists of a completely enclosed area consisting of 13 rooms located along a central corridor. Because of high levels of radioactivity, the Vault must have specialized inspection procedures to adhere to "as low as reasonably achievable" principles established by the Atomic Energy Act. Performance of a weekly inspection of the storage rooms pursuant to the requirements of 20.4.1 NMAC §264.174 [6-14-00], would result in an annual employee exposure of 2.7 Roentgen equivalent man (rem) of neutron radiation. This exceeds the annual allowable employee exposure rate of 2 rems. Therefore, the following alternative inspection procedures have been implemented. These inspection requirements are applicable only to those rooms in the Vault that store mixed waste regulated pursuant to 20.4.1 NMAC Subpart V, Part 264 [6-14-00].

C.1.1 Non-Intrusive Inspection Systems

Continuous air monitors (CAM) are located in each individual storage room within the Vault to continuously monitor airborne radioactivity levels. If the concentration of an airborne material reaches a preset level, an alarm will sound. All of the containers in the Vault contain radioactive material. If container integrity is compromised and the material inside the container becomes airborne, the CAM will detect the release and sound an alarm. CAM air intakes have been placed near the negative air exhaust vent for each room. Placing CAM air intakes near room-exhaust points provides the most beneficial location within the room to detect a release because air vented from each room must pass

by the CAM intake prior to exhausting from the room. Each room has a single exhaust vent. If a problem with a container is identified, it is removed from the Vault and inspected in an open-front hood.

Information obtained during inspections and all container transfers are noted on the Vault Traffic Log Book maintained at TA-55. The Vault Traffic Log Book will be inspected weekly by Nuclear Materials Technology staff as a quality assurance measure to verify receipt or transfer of mixed waste from the Vault. If mixed waste is not currently being stored in the Vault and the weekly inspection indicates that no mixed waste has been received, the Inspection Record Form (IRF) will be marked "No Use" and completed according to the IRF instructions.

The Vault has extremely strict security and safeguards. Therefore, there is no significant potential for container breaches through inadvertent and uncontrolled access to the Vault.

C.1.2 Intrusive Inspection Procedures

The central hallway of the Vault will be inspected weekly when mixed waste is in storage and will address the following items:

- Vault Traffic Log Book inspected for receipt or transfer of waste
- Communications equipment
- Warning signs
- Security
- Work surfaces/floors in central corridor
- Spill/fire equipment
- Secondary containment
- (Un)loading area
- Visual inspection of storage rooms from hallway
- Nuclear Materials Custodian contacted to verify no alarms or problems

When containers are placed into or removed from a storage room within the Vault, the following items will be inspected in that storage room, as appropriate:

- Vault Traffic Log Book inspected for receipt or transfer of waste
- Communication equipment
- Warning signs
- Security
- Work surfaces/floors
- Spill/fire equipment
- Secondary containment
- (Un)loading area
- Nuclear Materials Custodian contacted to verify no alarms or problems

- Emergency equipment/lighting
- Covers/lids of containers
- Labels
- Accumulation start date
- Compatibility
- Structural integrity of containers
- Aisle spacing/stacking
- Pallets/raised containers

Inspection results are recorded on the IRF maintained at TA-55.

C.2 STORAGE TANK SYSTEM [20.4.1 NMAC §264.15(b), 264.193(i), and 264.195]

The storage tank system components located at TA-55-4, Room 401, are inspected according to the schedule provided below. The inspection frequency is based on the deterioration rate of equipment/systems and the probability of adverse impact to human health or the environment if failure of the equipment/systems or any operator error goes undetected between inspections.

C.2.1 Daily (During Operation)

The storage tank system components (including ancillary equipment) will be inspected at least once each operating day. An operating day includes when mixed waste is added to or emptied from a tank. For daily inspections, the following items will be inspected, as appropriate, and recorded on the IRF:

- Work surfaces/floors
- Secondary containment structure
- Structural integrity of tanks and ancillary equipment
- Labels
- (Un)loading areas
- All portions of tank systems to detect corrosion or releases of waste and to detect any possible malfunctions to overfill/spill control equipment, tank monitoring, and leak detection systems and data from these systems
- Proper operating condition of tank

C.2.2 Weekly

Weekly inspection of the storage tank system components will be conducted and will include the following items, as appropriate, and recorded on the IRF:

- Warning signs
- Work surfaces/floors
- Secondary containment structures
- Covers/lids of tanks

- Labels
- Structural integrity of tanks and ancillary equipment
- (Un)loading areas
- All portions of tank systems to detect corrosion or releases of waste and to detect any possible malfunctions to overfill/spill control equipment, tank monitoring, and leak detection systems and data from these systems
- Proper operating condition of tank

C.2.3 Annually

An annual assessment, as required by 20.4.1 NMAC §264.193 (i) [6-14-00], is not necessary for the TA-55 storage tank system and ancillary equipment because the storage tank system and the ancillary equipment have secondary containment.

C.3 CEMENTATION UNIT [20.4.1 NMAC §§264.15(b) and 264.602]

The cementation unit is located at TA-55-4, Room 401, and is inspected according to the schedule provided below. The inspection frequency is based on the deterioration rate of equipment/systems and the probability of adverse impact to human health or the environment if failure of the equipment/systems or any operator error goes undetected between inspections.

C.3.1 Daily (During Operation)

The cementation unit is inspected each operating day (i.e., when mixed waste is treated in the unit). For the daily inspection of the cementation unit, the following items will be inspected, as appropriate, and recorded on the IRF:

- Work surfaces/floors
- Secondary containment structures
- Labels
- Structural integrity of cementation unit
- (Un)loading area

C.3.2 Weekly

Weekly inspection of the cementation unit will be conducted and will address the following items, as appropriate and recorded on the IRF:

- Warning signs
- Work surfaces/floors
- Secondary containment structure
- Labels
- Structural integrity of cementation unit
- (Un)loading area

C.4 ADDITIONAL INSPECTION ITEMS

The items listed below are inspected monthly and documented by the Facility and Waste Operations Division (FMU-7) on a separate form:

- Evacuation alarms
- Ventilation alarms
- Fire alarms
- Fire pumps
- Fire extinguishers
- Communication equipment
- Eyewashes/safety showers

These inspection items may be changed at the discretion of FMU-7 to ensure consistency with the inspection items and frequencies specified in the most current version of the "TA-55 Final Safety Analysis Report" (LANL, 1996) and the "TA-55 Technical Safety Requirements" (LANL, 2000).

Additionally, security inspections of the fences and TA-55 access controls are conducted daily.

C.5 INSPECTION AND MONITORING FOR UNITS SUBJECT TO SUBPARTS AA AND BB REQUIREMENTS [20.4.1 NMAC, Subpart V, Part 264, Subparts AA and BB]

The TA-55 CSUs are not subject to the requirements of 20.4.1 NMAC, Subpart V, Part 264, Subparts AA and BB because they do not operate applicable process vents or equipment.

C.6 INSPECTION AND MONITORING FOR UNITS SUBJECT TO SUBPART CC REQUIREMENTS [20.4.1 NMAC, Subpart V, Part 264, Subpart CC]

The hazardous wastes stored in containers at the TA-55 CSUs may be subject to 20.4.1 NMAC, Subpart V, Part 264, Subpart CC (incorporating the Code of Federal Regulations [CFR], Title 40, Part 264, Subpart CC, "Air Emission Standards for Tanks, Surface Impoundments, and Containers") based on the applicability criteria specified in 40 CFR §264.1080. Subpart CC standards for containers, as currently set forth by the U.S. Environmental Protection Agency, require that containers of hazardous waste be covered so that there are no detectable emissions of volatile organic compounds to the air. Inspection and monitoring requirements are also specified.

As indicated in 40 CFR §264.1080(b)(6), these standards are not currently applicable to containers that are used solely for management of radioactive mixed waste in accordance with all regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act. The standards are also not applicable to containers of hazardous waste with less than 500 parts per million by weight

(ppmw) volatile organics, containers of less than 0.1 cubic meters (m^3) (approximately 26 gallons) capacity, or that have received waste prior to the effective date of the regulation (December 6, 1996). The following management standards apply for hazardous waste managed at LANL that do not meet any of the exemption listed in 40 CFR §264.1080(b).

LANL requires that Subpart CC requirements be evaluated by the generator as part of the waste characterization process. Generator information is used to determine whether the concentration of volatile organics in a waste stream at the point of generation is less than 500 ppmw or is equal to or greater than 500 ppmw, which is the threshold concentration for Subpart CC requirements. The generator documents this determination for that waste stream. In the event that this information is not available, the waste will be characterized in accordance with Appendix B of the most recent version of the LANL General Part B. Any hazardous waste that is newly-generated through the treatment or re-characterization of mixed waste at TA-55 will be characterized for the volatile organic content in accordance with Appendix B.

Three levels of air emission controls based on container design capacity are established in 40 CFR §264.1086(b). TA-55 hazardous waste storage procedures require Level 1 controls based upon container design capacities. Containers of greater than 0.1 m^3 and less than 0.46 m^3 (approximately 119 gallons) capacity and that meet U.S. Department of Transportation specifications under 49 CFR, Part 178, are kept closed during storage pursuant to 40 CFR §264.1086 (c)(3). Containers undergoing waste characterization activities may be opened for access for the purposes described in 40 CFR §264.1086(c)(3). As required by 40 CFR §264.1086(c)(4), these containers are subject to a visual inspection and monitoring program. On or before acceptance of the waste container, the container is inspected to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position, in accordance with 40 CFR §264.1086(c)(1)(ii). This inspection is documented in uniform hazardous waste manifests. Pursuant to the Inspection Plan in Appendix C of the most recent version of the LANL General Part B, containers are inspected weekly at TA-55 to ensure that the containers remain closed during storage, thereby exceeding the requirements of 40 CFR §264.1086(c)(4)(ii).

C.7 REFERENCES

LANL, 2000 and all recent revisions, “TA-55 Technical Safety Requirements,” Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 1996 and all recent revisions, “TA-55 Final Safety Analysis Report,” Los Alamos National Laboratory, Los Alamos, New Mexico.